What is claimed is:

1. A vertically aligned liquid crystal display device for controlling liquid crystal molecules alignment in voltage application by providing linear structures or linear slits consisting of a plurality of constituent units to at least one of a pair of substrates having an electrode thereon, comprising:

alignment controlling means for forming an alignment singular point s=-1 of liquid crystal molecules at an intersecting point between the structures on the electrode or the slits in the electrode and an edge of a pixel electrode on one of the substrates.

2. A liquid crystal display device according to claim 1, wherein the linear structures are formed on the pixel electrode or a common electrode.

3. A liquid crystal display device according to claim 1, wherein the slits are not formed on the edge of the pixel electrode located on prolonged lines of the slits.

4. A liquid crystal display device according to claim 1, wherein the structure is divided on or over the edge of the pixel electrode.

5. A vertically aligned liquid crystal display device for controlling liquid crystal molecules alignment in voltage application by providing linear structures or linear slits consisting of a plurality of

constituent units to at least one of a pair of substrates having an electrode thereon, comprising:

alignment controlling means for forming an alignment singular point s=+1 of liquid crystal molecules at an intersecting point between the structures or the slits formed on one substrate and an edge of a pixel electrode formed on the other substrate.

6. A vertically aligned liquid crystal display device for controlling liquid crystal molecules alignment in voltage application by providing linear structures or linear slits consisting of a plurality of constituent units having a bending portion to at least one of a pair of substrates having an electrode thereon,

wherein the bending portions of the structures or the slits on one of the substrates having a pixel electrode are put out from the edge of the pixel electrode.

7. A vertically aligned liquid crystal display device for controlling liquid crystal molecules alignment in voltage application by providing linear structures or linear slits consisting of a plurality of constituent units having a bending portion to at least one of a pair of substrates having an electrode thereon,

wherein the bending portions of the structures or the slits arranged on the other substrate to oppose to a pixel electrode on one substrate are not arranged on the edge of the pixel electrode.

8. A thin film transistor substrate comprising:

a storage capacitance forming electrode formed on a first substrate;

an active element formed on the first substrate; and

a pixel electrode formed on the first substrate to be connected to the active element, and divided into at least three areas by slits;

wherein electrical connection of one area of the three areas of the pixel electrode to another area has a plurality of routes passing through different areas.

9. A thin film transistor substrate according to claim 8, wherein at least two of the routes of the electrical connection are provided to oppose electrically to the storage capacitance forming electrode.

10. A thin film transistor substrate according to claim 9, wherein areas opposing to the storage capacitance forming electrode are different every route opposing to the storage capacitance forming electrode.

11. A thin film transistor substrate according to claim 9, wherein thicknesses of dielectric layers are different in areas opposing to the storage capacitance forming electrode every route opposing to the storage capacitance forming electrode.

12. A thin film transistor substrate according to claim 9, wherein storage capacitance values are

different every route opposing to the storage capacitance forming electrode.

13. A liquid crystal display device including a thin film transistor substrate set forth in any one of claims 8 to 12.

14. A liquid crystal display device in which liquid crystal having negative dielectric anisotropy is sealed between a first substrate and a second substrate, to surfaces of which a vertical alignment process is applied, and alignment of the liquid crystal molecules becomes substantially perpendicular when no voltage is applied, substantially parallel when a predetermined voltage is applied, and oblique when a voltage smaller than the predetermined voltage is applied, comprising:

a first domain defining means formed of dielectric projections provided on the first substrate, for defining an oblique alignment direction of the liquid crystal molecules when the voltage smaller than the predetermined voltage is applied;

a second domain defining means provided on the second substrate, for defining the oblique alignment direction of the liquid crystal molecules when the voltage smaller than the predetermined voltage is applied;

a plurality of first bus lines formed on the first substrate or the second substrate;

a plurality of second bus lines formed over the

first bus lines at a distance;

a pixel electrode formed in areas that are partitioned by the first bus lines and the second bus lines; and

dielectric structures formed on at least one of the first substrate and the second substrate in areas to oppose to at least a part of areas between the pixel electrode and the first bus lines, the dielectric structures being different from the projections.

15. A liquid crystal display device according to claim 14, wherein the projections and the dielectric structures are formed of same material and by same steps.

16. A liquid crystal display device according to claim 14, wherein the dielectric structures are formed on at least one of the first bus lines and the second bus lines.

17. A liquid crystal display device according to claim 14, wherein the second domain defining means are projections to protrude into a layer of the liquid crystal or slits opened partially in an electrode on a second substrate side.

18. A liquid crystal display device according to claim 14, wherein a red, green, or blue color filter is formed to oppose to the pixel electrode, and the dielectric structures are composed of color filters that are overlapped in areas not opposing to the pixel

electrode.

19. A liquid crystal display device according to claim 18, wherein the areas not opposing to the pixel electrode are at least one of areas between the first bus lines and the pixel electrode and areas between the second bus lines and the pixel electrode.

20. A liquid crystal display device according to claim 18, wherein another dielectric structures are further superposed on the areas in which the color filters are overlapped.

21. A liquid crystal display device according to claim 18, wherein another dielectric structures are formed to oppose to the areas in which the color filters are overlapped.

22. A liquid crystal display device according to claim 14, wherein the dielectric structures are formed up to areas protruding into a part of the pixel electrode.

23. A liquid crystal display device according to claim 14, wherein at least one of the first domain defining means and the second domain defining means is not provided on an outside of the pixel electrode, or is not provided in peripheral areas intersecting with at least one of the first bus lines and the second bus lines.

24. A liquid crystal display device according to claim 14, wherein a thickness of the dielectric

structures is more than 1 μm.

25. A liquid crystal display device comprising:

a first substrate and a second substrate arranged in parallel with each other at a distance;

a liquid crystal layer formed by filling liquid crystal material having negative dielectric anisotropy between the first substrate and the second substrate;

a first electrode and a second electrode formed on opposing surfaces of the first substrate and the second substrate respectively to define a pixel by at least one of them;

projections formed on the opposing surface of the first electrode;

a domain defining means formed on the opposing surface of the second electrode, for defining boundary positions of domains in which tilt directions of liquid crystal molecules are uniform together with the projections;

an alignment film formed on at least one of the first substrate and the second substrate and having an alignment defining force to align the liquid crystal molecules on a surface of the alignment film perpendicularly to a film surface; and

a compensating means arranged along edges of the projections when viewed along a normal direction of the first substrate, for reducing a double refraction effect acting on a light, that transmits in a thickness

direction of the liquid crystal layer, due to oblique alignment of the liquid crystal molecules of the liquid crystal layer in a neighborhood of the edges of the projections.

26. A liquid crystal display device according to claim 25, wherein the compensating means is formed of optical member which is arranged along the edges of the projections on a non-opposing surface of the first substrate and formed of material having refractive anisotropy.

27. A liquid crystal display device according to claim 25, wherein the projections contain a first portion positioned in a neighborhood of the edge and having refractive anisotropy and a second portion positioned in a center portion having no refractive anisotropy or smaller refractive anisotropy than the first portion respectively, and the first portions are also used as the compensating means.

28. A liquid crystal display device comprising:

a first substrate and a second substrate arranged in parallel with each other at a distance;

a liquid crystal layer formed by filling liquid crystal material having negative dielectric anisotropy between the first substrate and the second substrate;

a first electrode and a second electrode formed on opposing surfaces of the first substrate and the second substrate respectively to define a pixel by at

least one of them;

an alignment film formed on at least one of the first substrate and the second substrate and having an alignment defining force to align the liquid crystal molecules of the liquid crystal layer perpendicularly to the film surface;

projections formed on the opposing surface of the first electrode;

a first domain defining means provided on the opposing surface of the first electrode and having a pattern elongated along one direction in at least a local area within a substrate surface, and for tilting the liquid crystal molecules in a neighborhood of an edge of the first domain defining means to such a direction that end portions positioned far from the first electrode go away from the first domain defining means when a voltage is applied between the first electrode and the second electrode; and

a second domain defining means provided on the opposing surface of the second electrode and arranged in parallel with or to be overlapped with the first domain defining means in at least a local area within the substrate surface when viewed along a normal direction of the substrate, and for tilting the liquid crystal molecules on an inside of the second domain defining means to a direction that is substantially parallel with a length direction of the second domain

defining means.

29. A liquid crystal display device according to claim 28, wherein the first domain defining means contains projections formed of dielectric material formed on the first electrode or slits formed in the first electrode, and

the second domain defining means contains projections formed on the opposing surface of the second substrate and having a conductive surface, areas of the alignment film which are formed on the opposing surface of the second substrate and in which an alignment defining force is destroyed or weakened, or recess patterns on the surface of the dielectric film formed on the opposing surface of the second substrate.

30. A liquid crystal display device according to claim 28, further comprising:

a third domain defining means formed on the opposing surface of the first substrate to extend in a direction orthogonally intersecting with the first domain defining means in at least a local area within the substrate surface, and for tilting the liquid crystal molecules of the liquid crystal layer in a neighborhood of an edge of the third domain defining means to such a direction that end portions positioned far from the first electrode go away from the third domain defining means when the voltage is applied between the first electrode and the second electrode.

31. A liquid crystal display device comprising:

a first substrate and a second substrate arranged in parallel with each other at a distance;

a liquid crystal layer formed by filling liquid crystal material having negative dielectric anisotropy between the first substrate and the second substrate;

a first electrode and a second electrode formed on opposing surfaces of the first electrode and the second electrode respectively to define a pixel by at least one of them; and

an alignment film formed on at least one of opposing surfaces of the first substrate and the second substrate, and defined into first areas containing at least two parallel patterns elongated in one direction and a second area between the first areas, the second area having an alignment defining force to align liquid crystal molecules of the liquid crystal layer perpendicularly to the substrate surface and the first areas having no alignment defining force or a weaker alignment defining force than the alignment defining force in the second area.

32. A liquid crystal display device according to claim 31, wherein a chiral agent is added into the liquid crystal layer.

33. A liquid crystal display device comprising:

a first substrate and a second substrate arranged in parallel with each other at a distance;

a liquid crystal layer formed by filling liquid crystal material having negative dielectric anisotropy between the first substrate and the second substrate;

a first electrode and a second electrode formed on opposing surfaces of the first electrode and the second electrode respectively to define a pixel by at least one of them; and

an alignment film formed on at least one of opposing surfaces of the first substrate and the second substrate, and defined into first areas extended from respective corners of the pixel to an inside of the pixel to have patterns connected mutually and a second area partitioned by the first areas and edges of the pixel, the second area having an alignment defining force to align liquid crystal molecules of the liquid crystal layer perpendicularly to the substrate surface and the first areas having no alignment defining force or a weaker alignment defining force than the alignment defining force in the second area.

34. A liquid crystal display device comprising:

a first substrate on which a first electrode and bus lines for transmitting a signal to the first electrode are formed;

a second substrate on which a second electrode is formed;

domain defining projections provided on one of the first substrate and the second substrate;

a plurality of domain defining slits provided on an electrode on the other of the first substrate and the second substrate to be aligned on a straight line;

a first alignment film for covering the first electrode;

a second alignment film for covering the second electrode; and

liquid crystal sealed between the first substrate and the second substrate and having negative dielectric anisotropy;

wherein a pre-tilt angle revealing process is applied to the alignment film on the other substrate in an area in which alignment of liquid crystal molecules becomes unstable by a lateral electric field from the bus line.

35. A liquid crystal display device according to claim 34, wherein the pre-tilt angle revealing process sets a pre-tilt angle at an interface between the alignment film and the liquid crystal to more than 45 degrees but less than 90 degrees when no voltage is applied.

36. A liquid crystal display device according to claim 34, further comprising:

auxiliary projections provided on one substrate to be arranged along the edge of the electrode on the other substrate.

37. A liquid crystal display device according to

claim 36, wherein the pre-tilt angle revealing process is applied to areas in which an angle between the domain defining projections and the edge of the pixel electrode is an obtuse angle.

38. A liquid crystal display device according to claim 34, wherein the pre-tilt angle revealing process is applied to a bus line side areas in the slits whose end portions on the bus line side are closed and which are positioned closest to the bus line.

39. A liquid crystal display device comprising:

a first substrate on which a first electrode and a bus line for transmitting a signal to the first electrode are formed;

a second substrate on which a second electrode is formed;

domain defining projections provided on one of the first substrate and the second substrate;

a plurality of domain defining slits provided on the electrode on the other of the first substrate and the second substrate to be aligned on a straight line; and

liquid crystal sealed between the first substrate and the second substrate and having negative dielectric anisotropy;

wherein a width of a bus line opposite side end of a first slit of the plurality of slits, that is positioned closest to the bus line, is set smaller than

a width of a bus line side end of a second slit positioned adjacent to the first slit.

40. A liquid crystal display device according to claim 39, further comprising:

auxiliary projections provided on one substrate to be arranged along the edge of the electrode on the other substrate.

41. A liquid crystal display device comprising:

a first substrate on which a first electrode and a bus line for transmitting a signal to the first electrode are formed;

a second substrate on which a second electrode is formed;

domain defining projections provided on one of the first substrate and the second substrate;

a plurality of domain defining slits provided on the electrode on the other of the first substrate and the second substrate to be aligned on a straight line;

a first alignment film for covering the first electrode;

a second alignment film for covering the second electrode; and

liquid crystal sealed between the first substrate and the second substrate and having negative dielectric anisotropy;

wherein a pre-tilt angle revealing process is applied to the alignment film on the other substrate in

an area in which alignment of liquid crystal molecules becomes unstable by a lateral electric field from the bus line, and a width of a bus line opposite side end of a first slit of the plurality of slits, that is positioned closest to the bus line, is set smaller than a width of a bus line side end of a second slit positioned adjacent to the first slit.

42. A liquid crystal display device in which liquid crystal is sealed between a pair of substrates on which electrodes are provided,

wherein a domain defining portion is provided on one substrate of the pair of substrates,

a dielectric film having a high dielectric constant portion and a low dielectric constant portion is provided on the other substrate of the pair of substrates, and

the high dielectric constant portion is arranged at positions in an oblique direction to the domain defining portion and the low dielectric constant portion is arranged at positions opposing to the domain defining portion, and difference in a relative dielectric constant between the high dielectric constant portion and the low dielectric constant portion is more than 0.5.

43. A liquid crystal display device according to claim 42, wherein slits are formed in the electrode on one substrate as the domain defining portion.

44. A liquid crystal display device according to claim 42, wherein projections are provided on one substrate as the domain defining portion.

45. A liquid crystal display device according to claim 42, wherein dielectric constant is changed stepwise between the high dielectric constant portion and the low dielectric constant portion.